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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,840	07/02/2002	Klaus-Dieter Nittel	CHEMMT-206	2175

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EXAMINER	
OLTMANS, ANDREW L	
ART UNIT	PAPER NUMBER
1742	

DATE MAILED: 07/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/088,840	NITTEL ET AL.	
	Examin r	Art Unit	
	Andrew L Oltmans	1742	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 8-16 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 8-16 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Objections

1. Claim 13 is objected to because of the following informalities:

Claim 13 uses the improper alternative language, "at least one of... nickel ions and ... magnesium ions". The examiner suggests either using Markush language, "selected from the group consisting of" or using the disjunctive "or". Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Hansen et al. 3,860,455 in view of Clifford et al. 2,375,468

3. Claims 8-10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. 3,860,455 (Hansen; cited on IDS filed March 21, 2002) in view of Clifford et al. 2,375,468 (Clifford; cited on IDS filed March 21, 2002).

Hansen teaches a manganese phosphate coating method and composition, wherein the composition overlaps the composition instantly claimed, including the concentrations ranges of iron(II), manganese, phosphate, nitrate, wherein the free acid, total acid and S-value (ratio of free phosphate to total phosphate ions) are also overlapping, as recited in claims 8 and 10 (col 2, lines 10-33):

The method in accordance with the invention for producing manganese- or iron-manganese-phosphate layers on steel in aqueous manganese phosphate or manganese-iron phosphate solutions is characterized in that the workpieces are brought into contact with aqueous bath solutions containing 1 to 35 g/l, preferably 1 to 24 g/l Mn; 0 to 30, preferably 0 to 29 g/l Fe II; 5 to 80 g/l P_2O_5, preferably 5 to 50 g/l P_2O_5; 0 to 80 g/l of a strongly acidic inorganic anion preferably 0 to 50 g/l NO_3, exhibit a point number between 15 and 150, preferably from 25 to 100, and in which the individual components are in the following weight ratios to one another: Fe(II):Mn = (0 to 10, preferably 0 to 9):1; Mn:P_2O_5 = (0.02 to 2.5, preferably 0.02 to 1.0):1; NO_3:P_2O_5 = (0 to 3, preferably 0 to 2):1: free P_2O_5:total P_2O_5 = (0.05 to 0.45, preferably 0.05 to 0.40):1. The

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using phenophthalein as indicator. The baths are supplemented according to the invention with Mn:P_2O_5:NO_3 in a weight ratio of (0.05 to 0.6, preferably 0.07–0.45):1:(0 to 1, preferably 0 to 0.9), wherein a weight ratio of free P_2O_5:total P_2O_5 = (0.5 to 1, preferably 0.6 to 1) is maintained. Particularly favorable relationships with reference to the possibility of concentrating the chemicals for makeup and the advantages described above are obtained when, in the makeup, the weight ratio of free P_2O_5:total P_2O_5 amounts to (0.65–1):1. Preferably the ratio amounts to (0.7–1):1.

Hansen further teaches the addition of additional components, including nickel, in a range that overlaps the claimed range, as recited in claim 13 (col 2, line 65 to col 3, line 7).

Hansen fails to meet all the limitations of the instant claims in that Hansen does not explicitly teach the accelerator instantly claimed or the exact range of compositional concentration claimed.

Clifford teaches that accelerators, such as nitroguanidine, accelerate the action of manganese phosphating conversion coating solutions "to so great an extent that it can be effected in the cold" (col 2, lines 16-27 and col 2, lines 48-51; Example 1).

With respect to the addition of nitroguanidine, one of ordinary skill in the art would have found the invention to be obvious because one of ordinary skill in the art would have been motivated to add nitroguanidine to the coating solution of Hansen in order to accelerate the coating method and allow the coating to take place in a cold environment, as taught in Clifford (Clifford: col 2, lines 48-51).

With respect to the concentrations of the components, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the coating composition taught by the reference overlaps that of the instant claims, In re Peterson, 65 USPQ2d 1379, In re Malagari, 182 USPQ 549, and MPEP 2144.05.

Hansen et al. 3,860,455 in view of Clifford et al. 2,375,468 in further view of Bittner et al. 5,795,408

4. Claim 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. 3,860,455 (Hansen; cited on IDS filed March 21, 2002) in view of Clifford et al. 2,375,468 (Clifford; cited on IDS filed March 21, 2002) in further view of Bittner et al. 5,795,408 (Bittner).

Hansen and Clifford teach and are applied as set forth above in paragraph 3.

Hansen in view of Clifford fails to meet all the limitations of the instant claims in that Hansen in view of Clifford does not explicitly teach the addition of the claimed complex-forming agent.

Bittner teaches the addition of complexing agents for the alloying constituents of steel, including citric acid, to phosphating solutions in order to stop or reduce the formation of sludge, while allowing the formation of a phosphate coating on a galvanized surface, as recited in claims 11-12 (col 2):

> It was found that with the above-mentioned concentrations of complexing agents for iron and nitrite, the iron dissolved from the side of the steel strip or sheet which is not galvanised or alloy galvanised, for the greater part undergoes a complex binding. A layer formation on the steel side cannot be ascertained. The formation of phosphate sludge in the phosphatising solution is completely stopped or reduced to a value of maximum 10% of the quantity of sludge otherwise observed. The desired phosphatising result on the galvanised or alloy galvanised side is not adversely affected.

and (col 3):

> acetic acid and/or oxalic acid. With this the content of the above-mentioned complexing agents in the phosphatising solutions should preferably amount to:

0,5	to	2,5	g/l	tartaric acid
0,2	to	0,4	g/l	citric acid
0,2	to	2,5	g/l	nitrilotriacetic acid or ethylenediaminetetraacetic acid (calculated as ethylenediamine tetraacetic acid).

With respect to the addition of complexing agent, one of ordinary skill in the art would have found the invention to be obvious because one of ordinary skill in the art would have been motivated to add a complexing agent to the composition of Hansen in order to provide the desirable effect of stopping or reducing the formation of sludge, while allowing the formation of a phosphate film on the surface of a galvanized substrate, as recited in Bittner (Bittner: col 2, lines 35-44).

Hansen et al. 3,860,455 in view of Clifford et al. 2,375,468 in further view of Oei et al. 4,824,490

5. Claim 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. 3,860,455 (Hansen; cited on IDS filed March 21, 2002) in view of Clifford et al. 2,375,468 (Clifford; cited on IDS filed March 21, 2002) in further view of Oei et al. 4,824,490 (Oei).

Hansen and Clifford teach and are applied as set forth above in paragraph 3.

Hansen in view of Clifford fails to meet all the limitations of the instant claims in that Hansen in view of Clifford does not explicitly teach the replacement of the manganese ions with manganese carbonate.

Oei teaches the use of manganese carbonate to control the concentration of free acid (col 3):

Manganese carbonate, zinc oxide and/or zinc carbonate are preferably used to adjust the ratio of free acid to total acid to (0.04 to 0.2):1. These components are added to the phosphatizing solution as a powder or in an aqueous suspension. To determine the contents of free acid and of total acid, bath samples of 10 ml are titrated with N/10 NaOH to the first and second transitions of phosphoric acid indicated by a color change, e.g., from dimethyl yellow (free acid test) and phenolphthalein (total acid test) used as indicators. The consumption of N/10 NaOH in milliliters corresponds to the points of free acid or total acid.

With respect to the use of manganese carbonate, one of ordinary skill in the art would have found the invention to be obvious because one of ordinary skill in the art would have been motivated to add manganese carbonate to the composition of Hansen in order to provide the desirable effect of controlling the concentration of free acid, as taught in Oei (Oei: col 3, lines 4-6).

Hansen et al. 3,860,455 in view of Clifford et al. 2,375,468 in further view of Shaw 2,987,427

6. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. 3,860,455 (Hansen; cited on IDS filed March 21, 2002) in view of Clifford et al. 2,375,468 (Clifford; cited on IDS filed March 21, 2002) in further view of Shaw 2,987,427 (Shaw).

Hansen and Clifford teach and are applied as set forth above in paragraph 3.

Hansen in view of Clifford fails to meet all the limitations of the instant claims in that Hansen in view of Clifford does not explicitly teach the step of subjecting the work pieces to sliding friction or the fabrication of the work pieces into axles, gear mechanisms and engine pistons.

Shaw teaches an example of a nitroguanidine manganese phosphate coated engine piston (i.e. a work piece subjected to sliding friction) (col 5):

Example V

A phosphate coating bath was made up to the following composition:

	Percent by weight
Manganese (Mn)	0.3
Iron (Fe)	0.1
Phosphate (PO_4)	1.6
Nitroguanidine	0.1
Non-ionic surface active agent (as in Ex. I)	0.5
Water	remainder

This solution was covered with the hydrocarbon material used in Example IV and used at 90° C., as in Example IV. Piston rings, panels, and nuts and bolts, so treated had similar coatings to those in Example IV.

Shaw teaches that the coating of the sliding work piece with manganese phosphate has the desirable effect of providing a wear resistant coating that liberates less sulphur dioxide and/or other chemicals (col 1):

solutions.

A principal object of the present invention is to provide acid coating baths, e.g. phosphate, chromate, oxalate or oxide coating baths, and methods of using same, which make it possible to obtain highly effective coatings in a more convenient and efficient manner and with a material reduction in the loss of sulphur dioxide liberating substances and/or other chemicals.

With respect to the step of subjecting the work pieces to sliding friction and the fabrication of the work pieces into axles, gear mechanisms and engine pistons, one of ordinary skill in the art would have found the invention to be obvious because one of ordinary skill in the

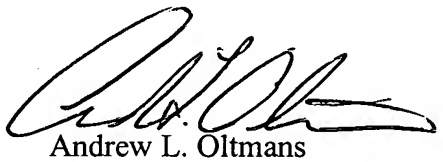
art would have been motivated to subject the coated work piece to sliding friction or to fabricate the work piece into an engine piston because the use in said applications is known, as taught in Shaw and one of ordinary skill in the art would have been motivated to provide a sliding surface that liberates less sulphur dioxide and/or other chemicals, as taught in Shaw (Shaw: col 1, lines 62-67).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew L. Oltmans whose telephone number is 703-308-2594. The examiner can normally be reached 7:00-3:30 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 703-308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Andrew L. Oltmans
Examiner
Art Unit 1742

June 30, 2003